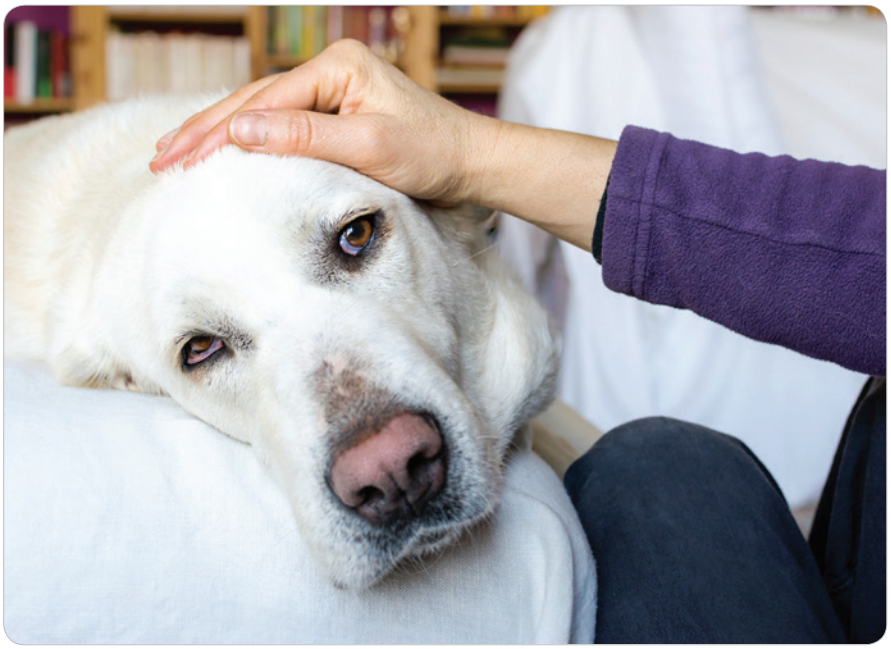
Treating Cushing's Disease in Dogs

Your 9-year old dog has been drinking a lot more lately and eating everything in sight. Plus, he's developed a potbelly and is losing hair. A visit to the vet and some diagnostic tests confirm that he has hyperadrenocorticism, commonly known as Cushing's disease. Cushing's disease results when the body produces too much of a hormone called cortisol. Cortisol is produced and stored by the adrenals, two small glands that sit on top of the kidneys.



Dogs, cats, and horses, as well as humans, can get Cushing's disease. It is more commonly found in dogs than in cats or horses.

"Cortisol is one of the body's natural steroids," says Ann Stohlman, V.M.D., a veterinarian in FDA's Center for Veterinary Medicine, adding that a normal amount of cortisol helps the body adapt in times of stress. Cortisol also helps regulate proper body weight, tissue structure, skin condition, and other features of good health.

But too much cortisol weakens the immune system, leaving the body vulnerable to other diseases and infections.

Two Common Types

Most canine Cushing's disease occurs naturally and is either pituitary-dependent or adrenal-dependent. About 80–85 percent of Cushing's is pituitary-dependent, meaning it's triggered by a tumor on the pituitary, a pea-sized gland at the base of the brain.

The pituitary makes a number of hormones, including adrenocorticotropic hormone (ACTH). The pituitary tumor causes overproduction of ACTH, which travels through the bloodstream to the adrenal glands, stimulating them to produce more cortisol than the body needs.

In the other 15–20 percent of Cushing's dogs, a tumor in one or both adrenal glands produces excess cortisol.

The type of Cushing's disease may determine what kind of treatment is prescribed.

Veterinarians use blood tests to diagnose Cushing's and to differentiate between disease caused by the pituitary or the adrenals. They may also use an ultrasound to help detect a tumor on an adrenal gland.

Symptoms of Cushing's Disease

Cushing's disease typically occurs in middle-aged to older dogs. The disease develops slowly and the

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early signs are not always noticed. Symptoms in dogs include

- increased thirst
- increased urination
- increased appetite
- reduced activity
- excessive panting
- thin or fragile skin
- hair loss
- recurrent skin infections
- enlargement of the abdomen, resulting in a "potbellied" appearance

Treating Cushing's Disease

Most veterinarians treat both adrenal- and pituitary-dependent Cushing's disease with medication. The only way to "cure" Cushing's disease is to remove the adrenal tumor if the disease is adrenal-dependent and the tumor hasn't spread, says Stohlman. However, because of the complexity and risks of the surgery, most cases are treated with medication. Surgical techniques to remove pituitary tumors in dogs are being studied, but surgery is not a widely available option.

Although Cushing's is typically a lifelong condition, the disease usually can be managed with medications. "It's important for a veterinarian to see the dog regularly and do blood tests," Stohlman says. "Monitoring blood tests and response to treatment help determine the right dose, which may need to be adjusted periodically."

Frequent blood tests and veterinary checkups are usually required in the first few months after starting treatment and then every few months after that, depending on the dog's response to treatment and tolerance to the medication.

Vetoryl (trilostane), approved by the FDA in 2008 is the only drug approved to treat both pituitary- and adrenal-dependent Cushing's in dogs. This prescription drug works by stopping the production of cortisol in the adrenal glands. Vetoryl should not be given to a dog that

- has kidney or liver disease
- takes certain medications used to treat heart disease
- is pregnant

The drug's most common side effects are poor or reduced appetite, vomiting, lack of energy, diarrhea, and weakness. Occasionally, more serious side effects, including bloody diarrhea, collapse, severe sodium/potassium imbalance, and destruction of the adrenal gland may occur, and may result in death. In 2014, with input from CVM, the manufacturer updated the information about patient monitoring and side effects on the package insert. Although not proven to be caused by Vetoryl, some additional side effects reported to CVM and now included on the package insert are adrenal insufficiency, shaking, elevated liver enzymes and elevated kidney tests.

Only one other drug, Anipryl (selegiline), is FDA-approved to treat Cushing's disease in dogs, but only to treat uncomplicated, pituitary-dependent Cushing's.

Veterinarians have often used a human chemotherapy drug, Lysodren (mitotane), "off-label" to treat Cushing's in dogs. Lysodren destroys the layers of the adrenal gland that produce cortisol. It requires careful monitoring and can have severe side effects.

"Off-label," or "extra-label," means veterinarians can legally prescribe human drugs to animals for uses not listed on the label, or for other species or at different dosage levels from those listed on the label. But because dogs may react unpredictably to human drugs, says Stohlman, it's beneficial to have treatments available that have been studied in dogs and approved specifically for them.

"Treating Cushing's is a balancing act," Stohlman says. "But dogs with the disease can live a good life if they are monitored closely by a veterinarian and the owner is diligent about bringing the dog in for blood work and checkups, watching for side effects and giving the medication as directed."

To learn more about reporting side effects for Vetoryl, Anipryl or other animal drugs, contact FDA at 1-888-FDA-VETS or online at: http://www.fda.gov/AnimalVeterinary/SafetyHealth

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